

בְּרֵאשִׁית

SIL Hebrew Font System

Technical Reference



SUMMER INSTITUTE OF LINGUISTICS

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SIL Hebrew Font System Technical Reference

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Table of Contents

Introduction to the SIL Hebrew Fonts 1-1

- Distribution 1-1
- License 1-2
- Support 1-3
- Contacting Us 1-3
- Font Samples 1-4
- SIL Ezra 1-4
- SIL Heb Trans — Regular 1-5
- SIL Heb Trans — Italic 1-5
- SIL Heb Trans — Bold 1-5
- SIL Heb Trans — Bold Italic 1-5
- SIL Heb Trans Caps — Regular 1-5
- SIL Heb Trans Caps — Italic 1-6
- SIL Heb Trans Caps — Bold 1-6
- SIL Heb Trans Caps — Bold Italic 1-6

Installation of Fonts 2-7

Choosing a Keyboard 3-8

Working with Encodings 4-9

- Two Hebrew Text Encodings 4-9
- Features of the SIL Hebrew Standard Encoding 4-10
- Features of the SIL Hebrew Display Encoding 4-11
- Converting Between SIL Hebrew Encodings 4-11

Transliteration Issues 5-12

- SIL Simple Transliteration 5-12
- SIL Full Transliteration 5-12
- Final Forms 5-12
- Vowels 5-12
- Mater Lectionis* 5-14
- Shewa 5-14
- Final He 5-15
- Punctuation 5-16
- Features of the SIL Hebrew Transliteration Encoding 5-17
- Transliteration Features of the QuickDraw GX Fonts 5-17

Using the Fonts With QuickDraw GX 6-18

- Features of the QuickDraw GX Fonts 6-18
- No Cantillation 6-18
- No Vowels 6-18
- No Other Stuff 6-18
- Hand Tuning 6-18

Transliteration 6-18
Alternate Cantillation Marks 6-19
Direct Glyph Access 6-19
Rafe 6-19
Alternate Lamed 6-19

Making a Point — Extraordinaria 7-20

Vowel Points 7-20
Cantillation Classes 7-21
Punctum Extraordinarium 7-21
Dagesh 7-21
Final Forms 7-21
Cantillation Marks - the Exceptions 7-21

Conversion of Texts 8-23

Conversion to SIL Hebrew Display Encoding on a PC 8-23
Transliteration on a PC 8-23
Transliteration on a Mac 8-23
On a Mac Using GX 8-23
Converting Michigan-Claremont Texts 8-24

Having Difficulty? 9-25

Vowels do not line up properly under consonants. 9-25
I don't get the expected characters when I type. 9-25
I get the right characters, but they change to wrong ones when I get to the end of a word. 9-25
I can type 1 or 2 characters and then nothing shows up until I hit return. 9-25
I can't get the letters to type right-to-left. 9-25
I can type everything but the athnah (Alt=). 9-25
Line breaks mess up the text when I am typing or viewing Hebrew text. 9-26
Hebrew text looks great in Ezra, but terrible when I change to another Hebrew font. 9-26
I can't find the Final Forms on the Keyboard Chart. 9-26
The keyboard seems inconsistent: If I make a mistake when I'm typing and have to backspace or back up, it doesn't always give me the right version of the letter I want. 9-26

Appendix A — SIL Hebrew Standard Encoding 10-27

Access Code Chart 10-27
Access Code Chart for 128-255 10-28
Access Code Listing - Hebrew Standard Encoding 10-29

Appendix B — SIL Hebrew Display Encoding 11-31

Access Code Chart for 32-127 11-31
Access Code Chart for 128-255 11-32
Access Code Listing - Hebrew Display Encoding 11-33

Appendix C — SIL Hebrew Transliteration Encoding 12-36

Access Code Chart for 32-127 12-36

Access Code Chart for 128-255 12-37

Access Code Listing - SIL Hebrew Transliteration Encoding 12-38

Appendix D — Comparison of SIL Hebrew Standard with Transliteration Encoding 13-39

Appendix E — Comparison of SIL Hebrew Display with Transliteration Encoding 14-41

Appendix F - Overstriking Characters 15-44

Appendix G — ISO/Unicode/SI Standards Comparison 16-47

The Hebrew Letters 16-47

The Hebrew Points 16-48

The Hebrew Cantillation Marks 16-48

Chapter 1 —Introduction to the SIL Hebrew Fonts

Welcome to the SIL Hebrew fonts package. We hope to provide here a complete system for entering, displaying, and printing Biblical Hebrew texts. Also included are fonts for transliteration and conversion programs for going from one encoding to another. We welcome your comments and hope you will contact us should you find any inconsistencies or oversights.

Two sets of fonts are included in this package:

SIL Ezra—containing the basic set of characters needed for Biblical Hebrew texts (Regular face)

SIL Hebrew Trans—containing characters used to transliterate Hebrew into Roman text (Regular, Bold, Italic, & Bold Italic faces)

In addition to the fonts themselves, this package includes either the Tavultesoft Keyboard Manager® (KeyMan) for Windows or SILKey for the Mac OS. Keyboard control files are included with these programs that simplify the typing of Hebrew text. Users may produce their own keyboard files if desired. Conversion routines, for use with the SIL Consistent Changes program (available from SIL's Web site) are also included to convert texts between character encodings.

For Macintosh users, a special “smart” version of the SIL Ezra font is planned for use with QuickDraw GX that automatically combines diacritics and includes alternate forms. A WorldScript script file that provides some of these features is also planned.

Consult the *Installation & Users Guide* for instructions on installing the system. The Release Notes may also contain further information, including known problems and a complete listing of the contents of this package and where they are installed.

Distribution

The Summer Institute of Linguistics (SIL) is an organization of linguists dedicated to the study and promotion of the thousands of languages around the world. SIL's International Publishing Services serves SIL by developing products to assist in the publication of linguistic texts.

This font system was originally developed to meet the needs and restrictions of in-house development projects, and so, may not adequately address the more generalized need for Biblical Hebrew computing solutions or be applicable in all situations. Nevertheless, we are happy to make this package available to the general academic community at no charge. You may (and are encouraged to) share these fonts and utilities with your friends and co-workers, but with the following restrictions:

- All files must be copied together, including this one.
- No fee may be charged for the fonts.
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Support

As these fonts and utilities are distributed at no cost, we are unable to provide a commercial level of personal technical support. We will, however, try to resolve problems that are reported to us. We do wish to know about these problems so they can be addressed in future releases. Even if you are not having any specific problems, but have an idea on how this system could be improved, we want to hear your ideas and suggestions.

Contacting Us

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Font Samples

The following samples illustrate each of the fonts included in this system. For detailed information on how symbols are assigned to access codes, see the appendices. The SIL Ezra and SIL Hebrew Trans text used is Genesis 1:1-5, from the *Biblia Hebraica Stuttgartensia* (Deutsche Bibelgesellschaft Stuttgart, 1967/77, 1983).

SIL Ezra

1 בְּרֵאשִׁית בָּרָא אֱלֹהִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ: 2 וְהָאָרֶץ
הָיְתָה תִּהְיוּ וְכָהוּ וְחֹשֶׁךְ עַל־פְּנֵי תְהוֹם וְרוּחַ אֱלֹהִים מְרַחֶפֶת עַל־פְּנֵי
הַמָּיִם: 3 וַיֹּאמֶר אֱלֹהִים יְהִי אוֹר וַיְהִי־אוֹר: 4 וַיֵּרָא אֱלֹהִים אֶת־
הָאוֹר כִּי־טוֹב וַיַּבְדֵּל אֱלֹהִים בֵּין הָאוֹר וּבֵין הַחֹשֶׁךְ: 5 וַיִּקְרָא
אֱלֹהִים לְאוֹר יוֹם וְלַחֹשֶׁךְ קָרָא לַיְלָה וַיְהִי־עֶרֶב וַיְהִי־בֹקֶר יוֹם
אֶחָד: פ

1 בְּרֵאשִׁית בָּרָא אֱלֹהִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ: 2 וְהָאָרֶץ
הָיְתָה תִּהְיוּ וְכָהוּ וְחֹשֶׁךְ עַל־פְּנֵי תְהוֹם וְרוּחַ אֱלֹהִים מְרַחֶפֶת עַל־פְּנֵי
הַמָּיִם: 3 וַיֹּאמֶר אֱלֹהִים יְהִי אוֹר וַיְהִי־אוֹר: 4 וַיֵּרָא אֱלֹהִים אֶת־
הָאוֹר כִּי־טוֹב וַיַּבְדֵּל אֱלֹהִים בֵּין הָאוֹר וּבֵין הַחֹשֶׁךְ: 5 וַיִּקְרָא
אֱלֹהִים לְאוֹר יוֹם וְלַחֹשֶׁךְ קָרָא לַיְלָה וַיְהִי־עֶרֶב וַיְהִי־בֹקֶר יוֹם
אֶחָד: פ

SIL Heb Trans — Regular

1 bārēʾšiyt bārāʾ ʾēlōhiym ʾēt haššāmayim wəʾēt hāʾāreṣ: 2 wəhāʾāreṣ hāyətāh tōhū wābōhū wəḥōšekʾ ʿal-pənēy tēhōm wərūʾh ʾēlōhiym mēraḥēpet ʿal-pənēy hammāyim: 3 wayyōʾmer ʾēlōhiym yəhiy ʾōr wayəhiy-ʾōr: 4 wayyarəʾ ʾēlōhiym ʾet-hāʾōr kiy-tōb wayyabədēl ʾēlōhiym bēyn hāʾōr ūbēyn haḥōšekʾ: 5 wayyiqərāʾ ʾēlōhiym lāʾōr yōm wəlaḥōšekʾ qārāʾ lāyālāh wayəhiy-ʿereḇ wayəhiy-bōqer yōm ʾehād: ¶

SIL Heb Trans — Italic

1 bārēʾšiyt bārāʾ ʾēlōhiym ʾēt haššāmayim wəʾēt hāʾāreṣ: 2 wəhāʾāreṣ hāyətāh tōhū wābōhū wəḥōšekʾ ʿal-pənēy tēhōm wərūʾh ʾēlōhiym mēraḥēpet ʿal-pənēy hammāyim: 3 wayyōʾmer ʾēlōhiym yəhiy ʾōr wayəhiy-ʾōr: 4 wayyarəʾ ʾēlōhiym ʾet-hāʾōr kiy-tōb wayyabədēl ʾēlōhiym bēyn hāʾōr ūbēyn haḥōšekʾ: 5 wayyiqərāʾ ʾēlōhiym lāʾōr yōm wəlaḥōšekʾ qārāʾ lāyālāh wayəhiy-ʿereḇ wayəhiy-bōqer yōm ʾehād: ¶

SIL Heb Trans — Bold

1 bārēʾšiyt bārāʾ ʾēlōhiym ʾēt haššāmayim wəʾēt hāʾāreṣ: 2 wəhāʾāreṣ hāyətāh tōhū wābōhū wəḥōšekʾ ʿal-pənēy tēhōm wərūʾh ʾēlōhiym mēraḥēpet ʿal-pənēy hammāyim: 3 wayyōʾmer ʾēlōhiym yəhiy ʾōr wayəhiy-ʾōr: 4 wayyarəʾ ʾēlōhiym ʾet-hāʾōr kiy-tōb wayyabədēl ʾēlōhiym bēyn hāʾōr ūbēyn haḥōšekʾ: 5 wayyiqərāʾ ʾēlōhiym lāʾōr yōm wəlaḥōšekʾ qārāʾ lāyālāh wayəhiy-ʿereḇ wayəhiy-bōqer yōm ʾehād: ¶

SIL Heb Trans — Bold Italic

1 bārēʾšiyt bārāʾ ʾēlōhiym ʾēt haššāmayim wəʾēt hāʾāreṣ: 2 wəhāʾāreṣ hāyətāh tōhū wābōhū wəḥōšekʾ ʿal-pənēy tēhōm wərūʾh ʾēlōhiym mēraḥēpet ʿal-pənēy hammāyim: 3 wayyōʾmer ʾēlōhiym yəhiy ʾōr wayəhiy-ʾōr: 4 wayyarəʾ ʾēlōhiym ʾet-hāʾōr kiy-tōb wayyabədēl ʾēlōhiym bēyn hāʾōr ūbēyn haḥōšekʾ: 5 wayyiqərāʾ ʾēlōhiym lāʾōr yōm wəlaḥōšekʾ qārāʾ lāyālāh wayəhiy-ʿereḇ wayəhiy-bōqer yōm ʾehād: ¶

SIL Heb Trans Caps — Regular

1 BĀRĒʾŠIYT BĀRĀʾ ʾĒLŌHIYM ʾĒT HAŠŠĀMAYIM WĒʾĒT HĀʾĀREṢ: 2 WĒHĀʾĀREṢ HĀYĒTĀH TŌHŪ WĀBŌHŪ WĒḤŌŠEKʾ ʿAL-PĒNĒY TĒHŌM WĒRŪʾH ʾĒLŌHIYM MĒRAḤĒPET ʿAL-PĒNĒY HAMMĀYIM: 3 WAYYŌʾMER ʾĒLŌHIYM YĒHIY ʾŌR WAYĒHIY-ʾŌR: 4 WAYYARĒʾ ʾĒLŌHIYM ʾET-HĀʾŌR KIY-TŌB WAYYABĒDĒL ʾĒLŌHIYM BĒYN HĀʾŌR ŪBĒYN HAḤŌŠEKʾ: 5 WAYYIQĒRĀʾ ʾĒLŌHIYM LĀʾŌR YŌM WĒLAḤŌŠEKʾ QĀRĀʾ LĀYĀLĀH WAYĒHIY-ʿEREḖ WAYĒHIY-BŌQER YŌM ʾEHĀD: ¶

׳ĔLŌHIYM BĒYN HĀ׳ŌR ŪBĒYN HAḤŌŠEK^א: 5 WAYYIQĒRĀ׳
 ׳ĔLŌHIYM LĀ׳ŌR YŌM WĒLAḤŌŠEK^א QĀRĀ׳ LĀYĒLĀH
 WAYḤHIY-׳EREB WAYḤHIY-ḲŌQER YŌM ׳EHĀD: ׀

SIL Heb Trans Caps — Italic

*1 BĒRĒ׳ŠIYT BĀRĀ׳ ׳ĔLŌHIYM ׳ĒT HAŠŠĀMAYIM WĒ׳ĒT HĀ׳ĀRES:
 2 WĒHĀ׳ĀRES HĀYĒTĀH TŌHŪ WĀBŌHŪ WĒḤŌŠEK^א ׳AL-PĒNĒY
 TĒHŌM WĒRŪ׳H ׳ĔLŌHIYM MĒRAḤĒPĒT ׳AL-PĒNĒY HAMMĀYIM:
 3 WAYYŌ׳MER ׳ĔLŌHIYM YḤHIY ׳ŌR WAYḤHIY-׳ŌR: 4 WAYYARĒ׳
 ׳ĔLŌHIYM ׳ET-HĀ׳ŌR KIY-TŌB WAYYABĒDĒL ׳ĔLŌHIYM BĒYN
 HĀ׳ŌR ŪBĒYN HAḤŌŠEK^א: 5 WAYYIQĒRĀ׳ ׳ĔLŌHIYM LĀ׳ŌR YŌM
 WĒLAḤŌŠEK^א QĀRĀ׳ LĀYĒLĀH WAYḤHIY-׳EREB WAYḤHIY-ḲŌQER
 YŌM ׳EHĀD: ׀*

SIL Heb Trans Caps — Bold

**1 BĒRĒ׳ŠIYT BĀRĀ׳ ׳ĔLŌHIYM ׳ĒT HAŠŠĀMAYIM WĒ׳ĒT
 HĀ׳ĀRES: 2 WĒHĀ׳ĀRES HĀYĒTĀH TŌHŪ WĀBŌHŪ
 WĒḤŌŠEK^א ׳AL-PĒNĒY TĒHŌM WĒRŪ׳H ׳ĔLŌHIYM
 MĒRAḤĒPĒT ׳AL-PĒNĒY HAMMĀYIM: 3 WAYYŌ׳MER
 ׳ĔLŌHIYM YḤHIY ׳ŌR WAYḤHIY-׳ŌR: 4 WAYYARĒ׳ ׳ĔLŌHIYM
 ׳ET-HĀ׳ŌR KIY-TŌB WAYYABĒDĒL ׳ĔLŌHIYM BĒYN HĀ׳ŌR
 ŪBĒYN HAḤŌŠEK^א: 5 WAYYIQĒRĀ׳ ׳ĔLŌHIYM LĀ׳ŌR YŌM
 WĒLAḤŌŠEK^א QĀRĀ׳ LĀYĒLĀH WAYḤHIY-׳EREB WAYḤHIY-
 ḲŌQER YŌM ׳EHĀD: ׀**

SIL Heb Trans Caps — Bold Italic

***1 BĒRĒ׳ŠIYT BĀRĀ׳ ׳ĔLŌHIYM ׳ĒT HAŠŠĀMAYIM WĒ׳ĒT
 HĀ׳ĀRES: 2 WĒHĀ׳ĀRES HĀYĒTĀH TŌHŪ WĀBŌHŪ WĒḤŌŠEK^א
 ׳AL-PĒNĒY TĒHŌM WĒRŪ׳H ׳ĔLŌHIYM MĒRAḤĒPĒT ׳AL-PĒNĒY
 HAMMĀYIM: 3 WAYYŌ׳MER ׳ĔLŌHIYM YḤHIY ׳ŌR WAYḤHIY-
 ׳ŌR: 4 WAYYARĒ׳ ׳ĔLŌHIYM ׳ET-HĀ׳ŌR KIY-TŌB WAYYABĒDĒL
 ׳ĔLŌHIYM BĒYN HĀ׳ŌR ŪBĒYN HAḤŌŠEK^א: 5 WAYYIQĒRĀ׳
 ׳ĔLŌHIYM LĀ׳ŌR YŌM WĒLAḤŌŠEK^א QĀRĀ׳ LĀYĒLĀH WAYḤHIY-
 ׳EREB WAYḤHIY-ḲŌQER YŌM ׳EHĀD: ׀***

Chapter 2 —Installation of Fonts

Please consult the *Installation and User's Guide* for information on installation of the SIL Hebrew TrueType fonts on a **Windows** machine. Included in the package is KeyMan with a keyboard file already prepared for typing in SIL Hebrew Display.

Please consult the *Installation and User's Guide* for information on installation of the SIL Hebrew TrueType fonts on a **Macintosh**. Included in the package is SILKey with a keyboard file already prepared for typing in SIL Hebrew Display.

Chapter 3 —Choosing a Keyboard

In the Installation & User's Guide, the user is instructed to install the “DE” keyboards. These keyboards are the best choice when inserting words or short phrases in Hebrew into a document. They provide the best display, and thus are called “DE”, for “Display Encoding”. However, some users may wish to produce lengthy word lists, dictionaries, or other documents which are meant to be searchable. For them, the Display Encoding will not be acceptable, specifically because it contains four versions of every vowel, rather than just one. See the chapter Working with Encodings for specifics on the differences between Display Encoding and the alternative searchable encoding called “Standard Encoding”.

The user must, at this point, decide what is the primary use of his Hebrew document. For texts the user will be only viewing and printing, the decision is an easy one. Use the DE keyboards. For texts which must be searchable, the user must use one of the SE keyboards. The SE keyboards are designed to produce completely unambiguous text. In other words, a shureq is not the same as a waw with dagesh. This is an important distinction in analysis. Please note, however, that the diacritic markings will not line up! If this were possible, there would be no need for the Display Encoding. With the SE keyboards, the user can be precise to the point of differentiating even the *mater lectionis* as being single entities. (Use the SE-Full keyboard). For the user preferring a more traditional approach, (without differentiating all *mater lectionis*), use the SE keyboard.

For users desiring both readability *and* searchability, the best option is the Macintosh GX system. Otherwise, it is recommended that text be entered in Standard Encoding (using SE or SE-Full keyboards), and then convert a copy of the text to Display Encoding, using the included CC tables. The reverse may also be done (enter the text in Display Encoding and convert a copy to SE for searching.) See the chapter on Conversion of Texts for more information.

Please read the following chapter on Encodings for complete information regarding the Standard and Display encodings.

Chapter 4 —Working with Encodings

Two Hebrew Text Encodings

The primary requirement for this font project was to create an unambiguous encoding. The second requirement was to have a somewhat legible encoding in any roman Windows font. These two requirements made it impossible to use any existing Hebrew font encoding as its basis. Therefore, the user will not likely see any correlation between this encoding and existing products.

Hebrew texts that have been prepared for use with these fonts will be in one of two text *encodings*: **SIL Hebrew Standard** or **SIL Hebrew Display**. An *encoding* is simply a way of connecting numeric access codes stored in a text file with the individual characters they should represent. For example, an *aleph* may be encoded (represented) as 039 in the text file. If the computer program understands that encoding, it knows to process code 039 as an *aleph*, and treat it appropriately, for example, as part of a word, and not punctuation.

Each of the SIL Hebrew encodings allow for the complete, unambiguous representation of Biblical Hebrew texts. The **SIL Hebrew Standard** encoding treats text as a string of linguistic information, so individual “pieces” of the text are not just symbols, but stand for individual phonemes or sounds. The encoding is designed for easy searching, linguistic analysis, and data transfer across computer platforms and networks. In other words, a *kamets* is a *kamets* and has only one code — 065. In contrast, the **SIL Hebrew Display** encoding treats text as a string of symbols with no inherent meaning. This allows for professional-looking documents, but makes text transfer and linguistic analysis difficult. In the case of *kamets*, there are four of them, which makes searching tedious. However, most texts can be converted from one encoding to the other without any loss of information, using the included CC¹ conversion tables.

To illustrate the difference between the two encodings, take the example of the word for fish — דָּג. In the SIL Hebrew Standard encoding this is encoded as three codes in sequence — *daleth* + *kamets* + *gimel*:

$$\begin{array}{ccccccc} \text{ד} & + & \text{ָ} & + & \text{ג} & = & \text{דָּג} \\ 100 & & 65 & & 103 & & \end{array}$$

Computer software (such as QuickDraw GX) that can directly display SIL Hebrew Standard takes care of moving the *kamets* underneath the right leg of the *daleth* automatically. For software which does not automatically handle this, some special software is required, such as KeyMan, SILKey, or a Consistent Changes program. All of these products can produce the SIL Hebrew Display encoding, selecting the symbols so that they display correctly, based on the context. In the following example, the *kamets* is replaced with the one (out of four) which falls in the correct position.

¹ CC is the SIL Consistent Changes program available separately. See <http://www.sil.org/>

$$\begin{array}{ccccccc}
 \text{ך} & + & \text{ט} & + & \text{ג} & = & \text{ךטג} \\
 100 & & 224 & & 103 & &
 \end{array}$$

Features of the SIL Hebrew Standard Encoding

A listing of the access codes used in the SIL Hebrew Standard encoding and the characters they represent is given in Appendix A. Whenever possible, Hebrew texts should be stored in the SIL Hebrew Standard Encoding. This encoding was developed in order to provide an error-resistant, long-term, platform- and technology- independent method of representing all the features of Biblical Hebrew texts. It is used directly with QuickDraw GX on the Macintosh, but is also useful in other environments when preparing a body of text for wide distribution or long-term use. However, this encoding will not be compatible with any other Hebrew encoding standard, due to restrictions placed on the project as noted at the beginning of this chapter.

Some of its features:

- 1) Hebrew text which is unpointed (has no vowels or cantillation marks) uses a 7-bit encoding which can be transported freely across platforms.
- 2) Fully pointed data is an 8-bit encoding, meaning that not all characters are found below 128. Character translation *will* occur when transporting fully pointed text between platforms or applications. However, its simplicity compared to the display encoding should allow for fewer errors during data editing.
- 3) The encoded text is recognized even if no Hebrew fonts are available, *provided you are using a Windows machine*. Hebrew characters are given the same access codes as similar ASCII characters (*aleph*=043=' , *beth*=098=b). An example:

Approximation of standard roman font in Windows without cants:

b–ürE'Hît b–ArA' 'élOhîm 'Et haH–Amayim wü'Et hA'Arec:

SIL Transliteration font:

ḇ·əreʔšîṭ ḇ·ārāʔ ʔēlōhîm ʔēt haš·āmayim wəʔēt hāʔāreṣ:

- 4) Text can be easily entered from any standard keyboard on any platform, *without* using additional keyboarding utilities such as KeyMan or SILKey, although these utilities will simplify data entry.
- 5) There is simplification of text where there are contextual forms. For example, *kaf* has a single access code. Both non-final *kaf* and all forms of word-final *kaf* share the same access code (107). This eases searching, keyboarding, and analysis. Computer software that uses the encoding directly includes the ability to display the correct symbol for *kaf* depending on its placement in the word.

Example: to search for every occurrence of *kaf* in SIL Hebrew Display encoded text requires searching for 6 separate codes (107,162,167,170,172,173), whereas searching through SIL Hebrew Standard encoded text requires looking for only a single code (107).

Features of the SIL Hebrew Display Encoding

The SIL Hebrew Display encoding was designed for preparation of professional-looking, high-quality documents using existing Microsoft Windows and Apple Macintosh operating systems and applications. A listing of the access codes used in the SIL Hebrew Display encoding and the characters they represent is given in Appendix B. Some of its features:

- 1) It is an 8-bit encoding. This means that it is easily used on either the Macintosh or Windows, but causes problems when trying to transfer text across platforms. It causes text to be unintelligible if viewed without the Hebrew font installed. Finally, some older software packages also do not fully support the use of 8-bit (ANSI or Mac) font encodings (such as earlier versions of Ventura Publisher).
- 2) Diacritics can be expertly aligned with the help of KeyMan or SILKey. Because of the nearly limitless number of diacritic combinations possible, overstriking diacritics are used. There are, however, incompatibilities between the use of overstriking diacritics and some video drivers making it impossible to see the characters on some PC monitors. If this should occur, try loading the driver provided by Microsoft for your product.
- 3) To enhance the look of the font, certain characters have multiple forms. *Kaf* has six access codes: word-final (162), non-final (107), and *kaf* combined with vowels or *dagesh* (167,170,172,173). Neither Windows or the Macintosh have the capability to display, in context, the correct symbol without the use of additional rendering systems. SIL Hebrew Display overcomes this problem, but the trade-off is that it is difficult to search for particular character strings.
- 4) Use of the additional keyboarding utilities, KeyMan or SILKey, is *required* for efficient and accurate data entry. This is due to the use of more access codes than are normally accessible from standard keyboards and to the complexity of the choices required.

Converting Between SIL Hebrew Encodings

A set of conversion tools that use the Consistent Changes program are provided with this package of fonts. They provide the means of going from one encoding to another, such as SIL Hebrew Standard encoding to SIL Hebrew Display encoding and vice versa. Consistent Changes is a program originally developed for DOS, but will soon be available for Windows. A version is also available for Mac. Using a set of rules similar to a table or program, CC can convert a file in one encoding to a different encoding. A number of these tables are included in the SIL Hebrew package, including one for converting lines of text to right-to-left. The tables provided can be modified to suit individual needs.

See the chapter Conversion of Texts for more information on CC.

Chapter 5 —Transliteration Issues

There are many methods of transliterating Biblical Hebrew text into roman characters. Most of them are quite similar, but differences appear when it comes to *dagesh*, *mappiq*, and whether accents are transliterated. Unfortunately, there is no generally established standard in the academic community.

In response, the SIL Translation Department has established a set of standards for the transliteration of Hebrew texts in SIL publications. A listing of the access codes used in this encoding and the characters they represent is given in Appendix C.

SIL Simple Transliteration

The list of characters corresponding to Hebrew consonants in this system is as follows:

ʔ b g d h w z ḥ ṭ y k l m n s ʿ p ʂ q r ś š t

The list of characters corresponding to Hebrew vowels is as follows:

a e i o u ə

SIL Full Transliteration

The main difference between other transliterations and the SIL Full Transliteration is that we have attempted to follow a phonemic system of one sound, one symbol. Texts which were previously ambiguous either in Hebrew or the transliteration can be encoded precisely using the SIL Hebrew Standard Encoding or Standard Transliteration encoding. Using the included CC tables, one can move from Hebrew to transliteration and back without loss of information.

Final Forms

Where there is context-sensitivity, such as the word-final forms, the transliteration does not show it. The one consonant sound of מ is transliterated *m*, no matter where it occurs.

Vowels

The full transliteration marks vowel quality, matching each sound to a unique symbol. Note that *kamets* and “*kamets_o*” have separate encodings. Since the transliteration of *kamets* to *a* or *o* is dependent on morphophonemic information (it is not apparent in the context), the user will have to choose which *kamets* is desired.

Short Vowels:

Access Codes	Hebrew	Trans	Description
97	◌ַ	a	patah
101	◌ֿ	e	segol
105	◌ִ	i	hireq
111	◌ֹ	o	kamets_o
117	◌ֻ	u	qibbutz

Long Vowels:

Access Codes	Hebrew	Trans	Description
65	◌ָ	ā	kamets
69	◌ֵ	ē	tsere
79	◌ֶ	ō	holem
244	◌ֹ	ô	holem_waw
251	◌ֻ	û	shureq

Reduced Vowels:

Access Codes	Hebrew	Trans	Description
225	◌ֶ	ă	h_patah
243	◌ֹ	ǫ	h_kamets
233	◌ֿ	ě	h_segol

Mater Lectionis

Where two symbols equal one sound, we have made them a single code. This applies to the “full” spelling of all *mater lectionis*. For example, *segol he* is transliterated to the access code 235 (eh). Following is a listing of the *mater lectionis* where this has been done. While it is not required that these symbols be used in either Hebrew or the transliteration, they are available for those who need a precise text.

Access Codes	Hebrew	Trans	Description
228	הַ	â	kamets_he
235	הֶ	eh	segol_he
203	הֵ	ēh	tsere_he
246	הֹ	ōh	holem_he
234	יֶ	ê	class2_segol_yod
202	יֵ	ē	class2_tsere_yod
238	יֹ	î	hireq_yod

Shewa

Furtive shewa (silent) and *mobile shewa* (pronounced) are transliterated as shown. If the user does not wish to differentiate the two, he should use shewa (mobile), at 252.

Access Codes	Hebrew	Trans	Description
248	◌ְ	◌̣	silent_shewa
252	◌ֱ	◌̥	shewa

Dagesh

In the case of *dagesh*, visual representation does not always match with pronunciation. For individual situations, there may be scholarly disagreement as to what type of *dagesh* is shown. In order to help users be consistent in keying for searches, we are making visual representation a higher priority than pronunciation, where the two conflict. There is only one codepoint for *dagesh* in the standard encoding. However, the transliteration forces one to make a decision. A Consistent Changes (CC) table is provided which will transliterate Hebrew Standard Encoding text into transliteration, in the following manner:

Begad kept consonants without *dagesh* are transliterated with a score: **bgdkpt**. Forms with *dagesh lene* appear simply as the single consonant: **bgdkpt**. *Dagesh lene* when it occurs word-initial, word-final, or word-medial following a silent *shewa*. Forms with *dagesh forte* appear as a doubled consonant: **bbgg....** *Dagesh forte* when it occurs with a word-medial consonant, following a vowel. For the *begad kept* consonants, there is no distinction in the transliteration between

consonants with a *dagesh lene* and the same consonants without *dagesh*. For pronunciation, the rule is that the consonant is pronounced as a fricative when occurring word-medially between vowels.

For non-*begad kepat* consonants, *dagesh forte* is transliterated as a doubled consonant.

Dagesh occurring alone (a rare occurrence) appears as a raised period (208) in the transliteration.

Final He

In word-final position, where *he* occurs with *dagesh* (*he mappiq*) it appears in transliteration as *h* followed by an underscore: h

In word-final position, where it occurs without *dagesh*, indicating that it is a *mater* (not pronounced), it appears as shown in the *mater lectionis* chart above, when they are being used. Otherwise, it will just be *h*.

Punctuation

Access Codes	Hebrew	Trans	Description	Notes on Usage
32			space	
33	!	!	exclam	
34	”	”	abbrv_2	Commonly used when abbreviating book names
35	’	’	abbrv_1	”
36	·		number	Used over consonants to indicate numbers below 1000
37	ˆ		number2	Indicates numbers 1000 and above
38	ֿ		rafe	A marking used to emphasize to reader there is no <i>dagesh</i> , or to mark the fricative pronunciation of the <i>begad kepat</i> letters
40	)	(	openparen	
41	(	)	closeparen	
42	*	*	asterisk	Used for marking a word
43	ˆ	ˆ	high_asterisk	Used for marking above a consonant (word-medial)
44	,	,	comma	
45	–	–	makkef	A marking similar in use to a dash
46	.	.	period	
47	/	/	slash	
58	:	:	sof_pasuq	Verse end marker
59	;	;	semicolon	
60	ס	§	setuma	Section marker
62	פ	¶	petuha	Section marker
63	?	?	question	
64	□		placeholder	Symbol used to show placement of diacritics
91	[	[	openbracket	
92	\	\	backslash	
93	]	]	closebracket	
123	}	{	openbrace	
125	{	}	closebrace	
126	°	†	circellus	A common marking for footnotes in the BHS
145	‘	‘	openquote	
146	’	’	closequote	
147	“	“	opendblquote	
148	”	”	closedblquote	
150	—	—	endash	
151	—	—	emdash	
171	»	«	guillemotopen	
178	˙		punctum	An unusual marking whose meaning is unknown - <i>punctum extraordinarium</i>
179	˘		punctum2	A <i>punctum extraordinarium</i> occurring below the line
187	«	»	guillemotclose	
255			thinspace	Used for spacing out diacritics to avoid collisions

Features of the SIL Hebrew Transliteration Encoding

The SIL Hebrew Transliteration encoding allows Hebrew text following either the simple or full transliteration standards to be stored in a single encoding. A single set of fonts — the SIL Hebrew Trans fonts — can then display transliterated text from either encoding. They are available in four styles — Regular, Italic, Bold, and Bold-Italic. Some of the features of this encoding:

- 1) It is an 8-bit (ANSI- or Mac-like) encoding, and so suffers from the same document transfer and compatibility problems as the SIL Hebrew encodings. However, unpointed data is 7-bit.
- 2) The encoding allows all the important linguistic distinctions in the Hebrew text to be encoded when the SIL Full Transliteration system is used. In this case, texts can then be accurately converted to either of the Hebrew encodings (standard or display) and viewed using the SIL Ezra font.
- 3) In most cases there is a one-for-one correspondence between the transliteration encoding and the standard Hebrew encoding.

Transliteration Features of the QuickDraw GX Fonts

The QuickDraw GX fonts have a number of features that allow texts in the SIL Hebrew Standard encoding to be viewed in a transliterated form quickly and without the use of additional conversion utilities. See the following chapter on Using the Fonts With QuickDraw GX for more information.

Chapter 6 —Using the Fonts With QuickDraw GX

SIL QuickDraw GX Hebrew fonts on the Macintosh offer the user the ability to produce beautiful documents with ease. No CC tables are required. Texts are stored in the SIL Hebrew Standard encoding and automatically displayed with correct alignment of diacritics and contextualization. A number of additional features are available to the user and are described below.

Features of the QuickDraw GX Fonts

The GX fonts automatically handle many tasks. Among these are right-to-left display, selection of the correct vowel and cantillation mark according to context, and final forms. Additional features are available at user discretion and are described below. The method of turning these features on and off depends upon the application. But most require the text to be selected before applying the feature.

No Cantillation

Displays text without cantillation marks.

No Vowels

Displays text without vowels.

No Other Stuff

Displays text without punctuation or other items.

Hand Tuning

Where GX fails to place glyphs exactly where desired on the page, text can be hand-tuned by the user. In general, cantillation marks can be adjusted from left to right by moving from class 0 to 7. First select the mark or syllable and turn off all placement features. Then click the appropriate features under Handtuning, beginning with the lowest number. The mark will adjust slightly to the right as each new feature is turned on. Vowels can also be adjusted from centered to left or right by selecting the appropriate feature.

Transliteration

A separate GX font is available for displaying Hebrew text in transliteration. Simply select the text and change the font to SIL Heb Trans GX. Upper case is a feature which can be turned on or off selected text. No conversion tables are needed, since the font works from text entered in the standard encoding.

Alternate Cantillation Marks

Some Old Testament versions such as Kittel use a different style of cantillation mark, with more curved lines. To display text with this style of cantillation, select the text and then select Alternate Cantillation. The alternate forms are shown below. The standard classes 0 through 5 are available for all diacritics listed here.

◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ	◌ֿ
398	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643

Direct Glyph Access

There are a number of glyphs in the QuickDraw GX Hebrew font which are not available in either the standard Mac or Windows fonts. Unlike these platforms, GX allows access to a very large number of glyphs. Most of these are accessed by the built-in features. But any glyph can be accessed directly using direct glyph access. Following is a chart of additional glyphs which are available by direct glyph access *only*, except for 550 which is an alternate *lamed* form.

To insert any glyph in a document by its number, select any roman font and type the glyph number left-to-right followed by an asterisk. Select the number and asterisk, change the font to SIL Ezra GX, and select the Direct Glyph Access feature.

אֵל	לֵא	לֵא	זֶשׁ	וּ	וּ	וּ	וּ
548	549	550	551	553	554	555	556

Rafe

The glyph *rafe* can be automatically inserted on any *non-dageshed begad kepat* letter by choosing this option. This option is experiencing technical difficulties and may not work correctly.

Alternate Lamed

This option will replace *lamed* with the form shown in Direct Glyph Access, glyph 550, above.

Chapter 7 —Making a Point — Extraordinaria

There are a number of extraordinary markings in the *Biblia Hebraica Stuttgartensia*. In fact, the Hebrew language has a very interesting and unique approach to orthography. Following are notes...points...or even, the point of view we have taken in addressing these “extraordinaria”. See the notes on punctuation in the chapter on Transliteration Issues for additional information.

Vowel Points

The following is a phonetic chart of the vowels and symbols which have been assumed to occur in the Hebrew language. These are only approximations, but it may be useful to see our perspective. The chart includes the *mater lectionis*, those vowels which were originally marked with consonants only, prior to the use of points. These are certainly optional, but they may be useful for certain situations.

i	î				û
i					u
יְ	יִ				יּ
ē	ēh	ê			u
e					u
יְ	הְ	יִ			יּ
e	eh	ê		ə	ō
ε				ə	ōh
יְ	הְ	יִ		יְ	יּ
			ě	ǎ	ǒ
			יְ	יּ	יּ
	a				ā/o
	a				â
	יְ				א/ו
					יּ

Cantillation Classes

Cantillation marks are divided into many classes. Class 0 places the cantillation at the left of the consonant, with the other classes moving progressively toward the right, under the consonant (with some exceptions). Unfortunately, there was not enough space to include all classes in the non-GX fonts. Therefore, only some classes are included, as space was available. For a complete solution to cantillation placement, see the chapter “Using the Fonts with QuickDraw GX”.

Where needed, use the thinspace (255) for spacing out diacritics to avoid overlap.

Punctum Extraordinarium

This single point appears above or below a consonant. Its function is not known. However, it is not to be confused with the similar marking which signifies a rebia or a numeric value. The *punctum* is at location 178. A low version of the *punctum* is at location 179.

Dagesh

Nine *dageshim* are provided in the SIL Hebrew Display encoding. The default is at location 208. It was thought preferable to include 9 approximations of the dagesh, rather than 22 exact versions of consonant plus dagesh, for the sake of space. The SIL Hebrew GX fonts contain the 22 exact versions. This is handled in the keyboard utility and conversion tables provided with the fonts.

Final Forms

The following chart shows the final consonant and consonant-vowel composite characters which are included. If there are forms which occur in the BHS that are not included here, we would appreciate knowing about them. Handling of final forms is included in the keyboard utility and conversion tables provided with the fonts.

ך	ם	ן	ף	ץ	ךְ	ןְ	ףְ	ךְּ	ןְּ	ףְּ
162	163	164	165	166	167	168	169	170	172	173

Cantillation Marks - the Exceptions

Exception 1: The only place we broke the rule of one symbol, one sound was in cantillation marks. Where there is a cantillation symbol, there is only one code, except for *pashta* and *zarqa*:

The symbol *pashta* falls in two locations, centered over a consonant or to the left. In order to differentiate these two, use *pashta* and *left_pashta*.

The other example is *zarqa*. This mark centers over a consonant when it applies to the syllable, but falls to the left of the consonant when it applies to the entire word or phrase. Use *left_zarqa* when it needs to be on the left.

Exception 2: Where *metheg* falls between the 2 parts of hatef_patah, we use one glyph, location 254 of the SIL Ezra display encoding. This is handled both in GX and the included conversion tables.

Chapter 8 —Conversion of Texts

Consistent Changes (CC) is a program written originally for the DOS operating system. It converts flat (non-word-processing) documents using a series of commands in a CC table. The CC programming language is very powerful and has been widely used in SIL. The CC tables included here are for the purpose of converting texts from one encoding to another, for those users using both SE and DE encodings, or the Michigan-Claremont files.

Conversion to SIL Hebrew Display Encoding on a PC

1) Run the following DOS command to convert the text file in SIL Hebrew Standard Encoding to SIL Display Hebrew Encoding.

```
cc -t se2de.cct -o genesis.dis genesis.txt
```

2) Before viewing the text in Hebrew, run:

```
cc -t r2l.cct -o genesis.r2l genesis.dis
```

This converts the text to a right-to-left format.

3) Copy *genesis.r2l* into the desired application, select it, and change the font to SIL Ezra to view the text in Hebrew. You may wish to right-justify.

Transliteration on a PC

To convert a SIL Hebrew Standard encoding text file for viewing in transliteration, run:

```
cc -t se2tr.cct -o genesis.trn genesis.out
```

To view the text in transliteration, copy *genesis.trn* into the desired application, select it, and change the font to SIL Heb Trans. Change the font to SIL Heb Trans Caps to view the text in upper case transliteration.

Transliteration on a Mac

The same conversion tables can be run on the Mac, using Mac-CC.

On a Mac Using GX

Copy your original file in standard encoding (ex: *genesis.txt*) into the desired GX application, select it, and change the font to SIL Ezra GX to view the text in Hebrew. Change the font to SIL Heb Trans GX to view the text in transliteration. Turn on the Upper Case feature to view the text in upper case transliteration. See Features in your GX application for additional options on viewing the text.

Converting Michigan-Claremont Texts

If you have access to the Michigan-Claremont texts of the BHS (CCAT), you can use the following example for Genesis to convert to the Ezra Standard Encoding. From there you may wish to convert to Ezra Display.

```
cc -t bhs2se.cct -o genesis.txt gen.bhs
```

Chapter 9 —Having Difficulty?

Following are tips on problems you may encounter when using the SIL Hebrew Font package.

Vowels do not line up properly under consonants.

You must use the Ezra-DE (Display) keyboard in order to get proper alignment of vowels and cantillation marks.

I don't get the expected characters when I type.

Be sure your Ezra or Transliteration keyboard is activated. For KeyMan, there will be a red line through the keyboard symbol when it is off. For SILKey, there will be a circle with a line through it next to the keyboard name when it is off, and a green check-mark when it is on.

I get the right characters, but they change to wrong ones when I get to the end of a word.

You must turn off *all* Auto-Correct features in Word 6. Click Tools>AutoCorrect... and turn off anything that is active. If you are using a different word-processor, be sure that it does not automatically capitalize words or do smart quotes. This will interfere with KeyMan's character selection.

I can type 1 or 2 characters and then nothing shows up until I hit return.

Your video driver is incompatible with the Ezra font, which uses overstriking to place vowels and accents. You must load the Microsoft driver for your monitor.

I can't get the letters to type right-to-left.

That's correct. Neither the keyboard nor the fonts can handle changing the directionality of the text. This must be handled either by the application or the operating system. Until that time, you can use the Word 6 macro, ReverseText, to change the direction of the text, once it's been typed in. DO NOT type text in backwards. This will only confuse the keyboard program, and is more work for you. If you are not using Word 6, there is a CC table for reversing text lines which may help. The keyboards and fonts have not been tested with non-U.S. versions of Windows or Word.

I can type everything but the athnah (Alt=).

The KeyMan hotkeys are interfering. Go into KeyMan> Options>HotKeys... and change the second hotkey to a different location, such as from Alt to Ctrl. Make

sure you don't select keys which are needed by the Ezra or Heb Trans keyboards for any of the hotkeys.

Line breaks mess up the text when I am typing or viewing Hebrew text.

Until there are applications available which correctly handle both left-to-right and right-to-left text, you will have to be extremely careful in text handling. Hebrew texts will require a return at the end of each line of text if you are not using Mac-GX. Try using a point size which is small enough to keep each line of text on a single line.

Hebrew text looks great in Ezra, but terrible when I change to another Hebrew font.

Texts typed using the Ezra keyboards and fonts are not compatible with any other Hebrew font, (except the SIL Hebrew Transliteration fonts). If you really need to view the text in a different font, you will need to re-type in the other system, or write a conversion table to go from the Ezra encoding to the encoding of your other font.

I can't find the Final Forms on the Keyboard Chart.

That's correct. There are no final versions of kaf, mem, nun, pe, and tsade on the keyboard. The keyboard program will automatically recognize when a final form is needed, so you don't have to worry about it. Be sure to type a punctuation mark or space after each word so that the keyboard can recognize the word-end.

Should you ever need a non-final form by itself, and the keyboard keeps changing it to the regular form, type a zerowidthletter after it (Alt-226 or Shift-Option-Zero). This should cause the regular form to stay put.

The keyboard seems inconsistent: If I make a mistake when I'm typing and have to backspace or back up, it doesn't always give me the right version of the letter I want.

There are a couple of reasons this could happen. If you accidentally type some key sequence which is not defined in the Hebrew keyboard, but instead pops you up to the Word 6 menu someplace, the keyboard will lose its place. It won't remember what has been typed. You need to erase the word or syllable and re-type it. This should help.

If you are going back to edit or make corrections, just inserting the cursor in the middle of a word will not work. The keyboards are dependent on the keystrokes that have just been typed. They cannot read what is on the line when you move the cursor. Edit carefully and re-type the entire word or syllable.

Chapter 10 —Appendix A — SIL Hebrew Standard Encoding

The following chart displays every access code in the SIL Hebrew Standard encoding and the ASCII equivalent of that code. The code and ASCII equivalent are displayed below the Hebrew character. Shaded boxes represent access codes that are not used in the SIL Standard Encoding.

When using the fonts on a Macintosh with QuickDraw GX applications, additional glyphs are available. See chapter on Using the SIL Hebrew Fonts with QuickDraw GX for more information.

Access Code Chart

	!	"	'	.	..	-	א)	(*	+	,	-	.	/
	!	"	#	\$	%	&	'	()	*	+	,	-	.	/
032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047
0	1	2	3	4	5	6	7	8	9	:	;	ס		פ	?
0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063
□	ט				..			ש						י	.
@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079
			ש				ש	ט]	\	[
P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095
	-	ב	צ	ד	..		ג	ה	.		כ	ל	מ	נ	ט
`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111
פ	ק	ר	ס	ת	..	ע	ו	ח	י	ז	}	|	{	°	DEL
p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127

Access Code Chart for 128-255

This chart displays additional standard encoding access codes for 128-255. These characters are best entered through the use of an additional keyboard utility such as KeyMan or SILKey. Otherwise, Windows users can directly enter characters by holding down the **right-Alt** key and typing **0** plus the three digit access code. Macintosh users can use standard System 7 keystrokes for entering these characters. These keystrokes are also listed under each glyph in the chart for your convenience. “SOe” means hold down the Shift and Option keys and type “e”. “OuA” means hold down the Option key and type “u”, then release the Option key and type “A” (Shift-a).

•	:	::	◊	◊	∞	<	⌵	⋮	\	/	//	⌵	ˆ	≡	\
OuA	SOa	SOc	OeE	OnN	OuO	OuU	Oea	O`a	Oia	Oua	Ona	Oa	Oc	Oee	O`e
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
ˆ	,	‘	”	“	ı	—	—	<	˘	˘	\	/	//	⌵	5
Oie	Oue	Oei	O`i	Oii	Oui	Onn	Oeo	O`o	Oio	Ouo	Ono	Oeu	O`u	Oiu	Ouu
144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
	^										>>				
Ot	SO8	O4	O3	O6	O8	O7	Os	Or	Og	O2	SOe	SOu	O=	SO'	SOo
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
		.	.	<							<<				
O5	SO=	O.	O.	Oy	Om	Od	Ow	SOp	Op	Ob	O9	O0	Oz	O'	Oo
176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
										י	ה				
SO/	O1	O1	Ov	Of	Ox	Oi	O\	SO\	O;	Ospc	O`A	OnA	OnO	SOq	Oq
192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
.															
O-	SO-	Oj	SOj	Oj	SOj	O/	SOv	Ouv	OuY	SO1	SO2	SO3	SO4	SO5	SO6
208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
	ֿ:			ה					ֿ:	י	ה			י	
SO7	SO9	SO0	SOw	SOv	SOm	OiE	SOy	OuE	O`E	SOs	SOd	SOf	O`I	SOh	SOj
224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
			ֿ:	י		ה		:			י	:			
SOk	SOl	SO;	OiU	O`U	SOb	SOi	SOu	SO.	SO.	Oh	Ok	SOz	SOg	SOx	SOt
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Access Code Listing - Hebrew Standard Encoding

Access Codes	ASCII	Hebrew	Description	Access Codes	ASCII	Hebrew	Description
32			space	104	h	ה	he
33	!	!	exclam	105	i		class2_hireq
34	"	״	abbrv_2	107	k	כ	kaf
35	#	׳	abbrv_1	108	l	ל	lamed
36	\$		number	109	m	מ	mem
37	%		number2	110	n	נ	nun
38	&		rafe	111	o		class2_kamets_o
39	'	א	aleph	112	p	פ	pe
40	(	)	openparen	113	q	ק	qoph
41	)	(	closeparen	114	r	ר	resh
42	*	*	asterisk	115	s	ס	samek
43	+		high_asterisk	116	t	ת	taw
44	,	,	comma	117	u		class2_qibb
45	-	-	makkef	118	v	ע	ayin
46	.	.	period	119	w	ו	waw
47	/	/	slash	120	x	ח	heth
48	0	0	zero	121	y	י	yod
49	1	1	one	122	z	ז	zayin
50	2	2	two	123	{	}	openbrace
51	3	3	three	124	|	|	paseq
52	4	4	four	125	}	{	closebrace
53	5	5	five	126	~		circellus
54	6	6	six	128		:	rebia
55	7	7	seven	129		׃	zakef
56	8	8	eight	130		׃	segolta
57	9	9	nine	131		׃	telisha_getanna
58	:	:	sof_pasuq	132		׃	telisha_gedola
59	;	;	semicolon	133		׃	class2_pazer_gad
60	<	ס	setuma	134		׃	ole_weyored
62	>	פ	petuha	135		׃	pazer
63	?	?	question	136		׃	zakef_gadol
64	@	□	placeholder	137		׃	pashta
65	A		class2_kamets	138		׃	geresh
69	E		class2_tsere	139		׃	gershayim
72	H	שׁ	shin	140		׃	illuj
78	N	נׁ	inverted_nun	141		׃	zarqa
79	O		class1_holem	142		׃	salseleth
83	S	שׂ	unp_sin	143		׃	left_pashta
87	W	ש׃	sin	144		׃	left_zarqa
88	X	שׂ	teth	145		׃	openquote
91	[	]	openbracket	146		׃	closequote
92	\	\	backslash	147		׃	opendblquote
93	]	[	closebracket	148		׃	closedblquote
97	a		class2_patah	149		׃	metheg
98	b	בּ	beth	150		—	endash
99	c	צׁ	tsade	151		—	emdash
100	d	דׁ	daleth	152		׃	yetib
101	e		class2_segol	153		׃	tebir
103	g	גׁ	gimel	154		׃	galgal

Access Codes	ASCII	Hebrew	Description
155		׀	tipha
156		׀	mereka
157		׀	mereka_k
158		׀	munah
159		׀	darga
161		׀	athnah
171		׀	guillemotopen
176		׀	nonbreakingspace
178		׀	punctum
179		׀	punctum2
180		׀	class2_accent
187		׀	guillemotclose
202		׀	class2_tsere_yod
203		׀	class2_tsere_he
208		׀	dagesh

Access Codes	ASCII	Hebrew	Description
225		׀	class2_h_patah
226		׀	zerowidthletter
228		׀	class2_kamets_he
233		׀	class2_h_segol
234		׀	class2_segol_yod
235		׀	class2_segol_he
238		׀	class2_hireq_yod
243		׀	class2_h_kamets
244		׀	holem_waw
246		׀	class1_holem_he
248		׀	class2_silent_shewa
251		׀	shureq
252		׀	class2_shewa

Chapter 11 —Appendix B — SIL Hebrew Display Encoding

The following charts display every character in the SIL Hebrew Display encoding. When using the fonts with QuickDraw GX on the Macintosh, use of the SIL Hebrew *Standard* encoding is required — see the chapter on Using the SIL Hebrew Fonts with QuickDraw GX. The white boxes indicate standard encoding characters. The shaded boxes are all duplicates of these in different widths or forms for display purposes only.

Access Code Chart for 32-127

This chart displays access codes 32-127. The code and ASCII equivalent are displayed below the Hebrew character. When not using an additional keyboard utility, characters can be entered directly by typing the standard keystroke for the ASCII symbol.

	!	"	'	·	¨	-	)	(*	*	,	-	.	/
	!	"	#	\$	%	&	'	()	*	+	,	-	.	/
032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047
0	1	2	3	4	5	6	7	8	9	:	;	ס		פ	?
0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063
□	ט	/	·	"	¨	·	·	ש	·	·	·	·	'	י	·
@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079
⌋	⌋	⌋	ש	"	"	⌋	ש	ט	\	⌋	⌋	\	⌋	s	ʻ
P	Q	R	S	T	U	V	W	X	Y	Z	⌋	\	⌋	^	
080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095
<	-	ב	צ	ד	·	·	ג	ה	·	·	כ	ל	מ	נ	ט
`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111
פ	ק	ר	ס	ת	·	ע	ו	ח	י	ז	}	|	{	°	DEL
p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127

Access Code Chart for 128-255

This chart displays access codes 128-255. These characters are best entered through the use of an additional keyboard utility such as KeyMan or SILKey. Otherwise, Windows users can directly enter characters by holding down the **right-Alt** key and typing **0** plus the three digit access code. Macintosh users can use standard System 7 keystrokes for entering these characters. These keystrokes are also listed under each glyph in the chart for your convenience. “SOe” means hold down the Shift and Option keys and type “e”. “OuA” means hold down the Option key and type “u”, then release the Option key and type “A” (Shift-a).

◌	◌◌	◌◌◌	◌◌◌◌	◌◌◌◌◌	◌◌◌◌◌◌	◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	
OuA	SOa	SOc	OeE	OnN	OuO	OuU	Oea	O`a	Oia	Oua	Ona	Oa	Oc	Oee	O`e
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
◌◌	◌◌◌	◌◌◌◌	◌◌◌◌◌	◌◌◌◌◌◌	◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	
Oie	Oue	Oei	O`i	Oii	Oui	Onn	Oeo	O`o	Oio	Ouo	Ono	Oeu	O`u	Oiu	Ouu
144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
◌◌	◌◌◌	◌◌◌◌	◌◌◌◌◌	◌◌◌◌◌◌	◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	
Ot	SO8	O4	O3	O6	O8	O7	Os	Or	Og	O2	SOe	SOu	O=	SO'	SOo
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
◌◌	◌◌◌	◌◌◌◌	◌◌◌◌◌	◌◌◌◌◌◌	◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	
O5	SO=	O,	O.	Oy	Om	Od	Ow	SOp	Op	Ob	O9	O0	Oz	O'	Oo
176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
◌◌	◌◌◌	◌◌◌◌	◌◌◌◌◌	◌◌◌◌◌◌	◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	
SO/	O1	O1	Ov	Of	Ox	Oj	O\	SO\	O;	Ospc	O`A	OnA	OnO	SOq	Oq
192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
◌◌	◌◌◌	◌◌◌◌	◌◌◌◌◌	◌◌◌◌◌◌	◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	
O-	SO-	O1	SO1	O1	SO1	O/	SOv	Ouy	OuY	SO1	SO2	SO3	SO4	SO5	SO6
208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
◌◌	◌◌◌	◌◌◌◌	◌◌◌◌◌	◌◌◌◌◌◌	◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	
SO7	SO9	SO0	SOw	SOr	SOm	OiE	SOy	OuE	O`E	SOs	SOd	SOf	O`I	SOh	SOj
224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
◌◌	◌◌◌	◌◌◌◌	◌◌◌◌◌	◌◌◌◌◌◌	◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌◌	
SOk	SOl	SO;	OiU	O`U	SOb	SOi	SOñ	SO,	SO.	Oh	Ok	SOz	SOg	SOx	SOt
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Access Code Listing - Hebrew Display Encoding

Access Code	Hebrew	Description	Access Code	Hebrew	Description
032		space	081	׳	class1_zarqa
033	!	exclam	082	״	class1_salseleth
034	”	abbrv_2	083	שׁ	unp_sin
035	׳	abbrv_1	084	”	class1_mereka_k
036	װ	number	085	״	class1_gershayim
037	װ	number2	086	׳	class1_left_zarqa
038	רַ	rafe	087	שׂ	sin
039	א	aleph	088	ט	teth
040	)	openparen	089	ױ	class1_tipha
041	(	closeparen	090	ױ	class2_munah
042	*	asterisk	091	]	openbracket
043	װ	high_asterisk	092	\	backslash
044	,	comma	093	[	closebracket
045	־	makkef	094	װ	class1_darga
046	.	period	095	װ	class1_tebir
047	/	slash	096	װ	class1_yetib
048	0	zero	097	װ	class2_patah
049	1	one	098	ה	beth
050	2	two	099	צ	tsade
051	3	three	100	ד	daleth
052	4	four	101	װ	class2_segol
053	5	five	102	װ	class2_hsegolmetheg
054	6	six	103	ג	gimel
055	7	seven	104	ה	he
056	8	eight	105	װ	class2_hireq
057	9	nine	106	װ	class1_galgal
058	:	sof_pasuq	107	כ	kaf
059	;	semicolon	108	ל	lamed
060	ס	setuma	109	מ	mem
061	׳	class1_pashta	110	נ	nun
062	פ	petuha	111	װ	class2_kamets_o
063	?	question	112	פ	pe
064	□	placeholder	113	ק	qoph
065	װ	class2_kamets	114	ר	resh
066	װ	class1_mereka	115	ס	samek
067	װ	class2_dagesh	116	ת	taw
068	װ	class1_zakef_gadol	117	װ	class2_qibb
069	װ	class2_tsere	118	ע	ayin
070	װ	class3_dagesh	119	ו	waw
071	װ	class5_dagesh	120	ח	heth
072	שׁ	shin	121	י	yod
073	װ	class6_dagesh	122	ז	zayin
074	װ	class7_dagesh	123	}	openbrace
075	װ	class8_dagesh	124	|	paseq
076	װ	class9_dagesh	125	{	closebrace
077	װ	class1_gereshe	126	°	circellus
078	ן	inverted_nun	127		RESERVED
079	װ	class1_holem	128	װ	class2_rebia
080	װ	class1_illuj	129	װ	class2_zakef

Access Code	Hebrew	Description	Access Code	Hebrew	Description
130	ˆ	segolta	182	ˆ	class1_telisha_qetanna
131	ˆ	telisha_qetanna	183	ˆ	class1_dagesh
132	ˆ	class2_telisha_gedola	184	ˆ	class1_telisha_gedola
133	ˆ	class2_pazer_gad	185	ˆ	class1_pazer_gad
134	ˆ	class2_ole_weyored	186	ˆ	class1_ole_weyored
135	ˆ	class2_pazer	187	ˆ	guillemotclose
136	ˆ	class2_zakef_gadol	188	ˆ	class1_pazer
137	ˆ	class2_pashta	189	ˆ	class1_metheg
138	ˆ	class2_geresht	190	ˆ	class15_metheg
139	ˆ	class2_gershayim	191	ˆ	class2_metheg
140	ˆ	class2_illuj	192	ˆ	class3_metheg
141	ˆ	class2_zarqa	193	ˆ	class4_metheg
142	ˆ	class2_salseleth	194	ˆ	class1_patah
143	ˆ	class1_left_pashta	195	ˆ	class1_kamets
144	ˆ	left_zarqa	196	ˆ	class1_kamets_o
145	ˆ	openquote	197	ˆ	class1_tsere
146	ˆ	closequote	198	ˆ	class1_segol
147	ˆ	opendblquote	199	ˆ	class1_hireq
148	ˆ	closedblquote	200	ˆ	class2_holem
149	ˆ	metheg	201	ˆ	class1_qibb
150	ˆ	endash	202	ˆ	class2_tsere_yod
151	ˆ	emdash	203	ˆ	class2_tsere_he
152	ˆ	yetib	204	ˆ	class1_shewa
153	ˆ	tebir	205	ˆ	class1_silent_shewa
154	ˆ	galgal	206	ˆ	class1_h_segol
155	ˆ	tipha	207	ˆ	class1_h_patah
156	ˆ	mereka	208	ˆ	dagesh
157	ˆ	class2_mereka_k	209	ˆ	class3_patah
158	ˆ	class1_munah	210	ˆ	class3_kamets
159	ˆ	darga	211	ˆ	class3_kamets_o
160	ˆ	RESERVED	212	ˆ	class3_tsere
161	ˆ	class1_athnah	213	ˆ	class3_segol
162	ˆ	final_kaf	214	ˆ	class3_hireq
163	ˆ	final_mem	215	ˆ	class3_holem
164	ˆ	final_nun	216	ˆ	class3_qibb
165	ˆ	final_pe	217	ˆ	class3_shewa
166	ˆ	final_tsade	218	ˆ	class3_silent_shewa
167	ˆ	final_ka	219	ˆ	class3_h_segol
168	ˆ	final_na	220	ˆ	class3_h_patah
169	ˆ	final_pe_dagesh	221	ˆ	class3_h_kamets
170	ˆ	final_kaf_shewa	222	ˆ	class4_patah
171	ˆ	guillemotopen	223	ˆ	class4_kamets
172	ˆ	final_kaf_dagesh	224	ˆ	class4_kamets_o
173	ˆ	final_ka_dagesh	225	ˆ	class2_h_patah
174	ˆ	class1_rebia	226	ˆ	zerowidthletter
175	ˆ	class1_zakef	227	ˆ	class4_tsere
176	ˆ	nonbreakingspace	228	ˆ	class2_kamets_he
177	ˆ	class1_segolta	229	ˆ	class4_segol
178	ˆ	punctum	230	ˆ	class4_hireq
179	ˆ	punctum2	231	ˆ	class4_qibb
180	ˆ	class2_accent	232	ˆ	class4_shewa
181	ˆ	class1_accent	233	ˆ	class2_h_segol

Access Code	Hebrew	Description
234	יְ	class2_segol_yod
235	הְ	class2_segol_he
236	ײ	class1_h_kamets
237	׳	class4_silent_shewa
238	יִ	class2_hireq_yod
239	ײ	class4_h_segol
240	ײ	class4_h_patah
241	ײ	class4_h_kamets
242	אֲ	class2_athnah
243	ײ	class2_h_kamets
244	ױ	holem_waw
245	ײ	class4_mereka

Access Code	Hebrew	Description
246	הֶ	class1_holem_he
247	׳	class4_tipha
248	׳	class2_silent_shewa
249	׳	class4_munah
250	׳	class4_darga
251	ױ	shureq
252	׳	class2_shewa
253	אֲ	class4_athnah
254	ײ	class2_h_patah_metheg
255		thinspace

Chapter 12 —Appendix C — SIL Hebrew Transliteration Encoding

The following charts display every access code used in the SIL Heb Trans fonts. When possible, letters share the same access code locations as their Hebrew equivalents. Those which don't are marked with an asterisk in the Access Code Listing. White boxes indicate the standard encoding. Shaded boxes represent duplicate forms which are used for display purposes.

The SIL Hebrew Transliteration encoding is used for all included SIL Heb Trans fonts. The symbols used in the SIL Heb Trans Caps fonts are upper case versions of those seen below.

Access Code Chart for 32-127

This chart displays access codes 32-127. The code and ASCII equivalent are displayed below the transliteration character. When not using an additional keyboard utility, characters can be entered directly by typing the standard keystroke for the ASCII symbol.

	!	"	'				ˆ	()	*	*	,	-	.	/
	!	"	#	\$	%	&	'	()	*	+	,	-	.	/
032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047
0	1	2	3	4	5	6	7	8	9	:	;	§		¶	?
0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063
	ā	b		d	ē		g	š			k			ŋ	ō
@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079
p			ṣ	t			ś	ṭ			[\]		
P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095
	a	b	ṣ	d	e		g	h	i		k	l	m	n	o
`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111
ṗ	q	r	s	ṭ	u	ˆ	w	ḥ	y	z	{		}	†	DEL
p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127

Access Code Chart for 128-255

This chart displays access codes 128-255. These characters are best entered through the use of an additional keyboard utility such as KeyMan or SILKey. Otherwise, Windows users can directly enter characters by holding down the **right-Alt** key and typing **0** plus the three digit access code. Macintosh users can use standard System 7 keystrokes for entering these characters. These keystrokes are also listed under each glyph in the chart for your convenience. “SOe” means hold down the Shift and Option keys and type “e”. “OuA” means hold down the Option key and type “u”, then release the Option key and type “A” (Shift-a).

OuA 128	SOa 129	SOc 130	OeE 131	OnN 132	OuO 133	OuU 134	Oea 135	O`a 136	Oia 137	Oua 138	Ona 139	Oa 140	Oc 141	Oee 142	O`e 143
	‘	’	“	”		—	—								
Oie 144	Oue 145	Oei 146	O`i 147	Oii 148	Oui 149	Onn 150	Oeo 151	O`o 152	Oio 153	Ouo 154	Ono 155	Oeu 156	O`u 157	Oiu 158	Ouu 159
											«				
Ot 160	SO8 161	O4 162	O3 163	O6 164	O8 165	O7 166	Os 167	Or 168	Og 169	O2 170	SOe 171	SOu 172	O= 173	SO' 174	SOo 175
				’	’						»				
O5 176	SO= 177	O, 178	O. 179	Oy 180	Om 181	Od 182	Ow 183	SOp 184	Op 185	Ob 186	O9 187	O0 188	Oz 189	O' 190	Oo 191
										ê	ēh				
SO/ 192	O1 193	O1 194	Ov 195	Of 196	Ox 197	Oj 198	O\ 199	SO\ 200	O; 201	Ospc 202	O`A 203	OnA 204	OnO 205	SOq 206	Oq 207
.															
O- 208	SO- 209	Oj 210	SOj 211	Oj 212	SOj 213	O/ 214	SOv 215	Ouy 216	OuY 217	SO1 218	SO2 219	SO3 220	SO4 221	SO5 222	SO6 223
	ă			â					ě	ê	eh	ī		î	
SO7 224	SO9 225	SO0 226	SOw 227	SOr 228	SOm 229	OiE 230	SOy 231	OuE 232	O`E 233	SOs 234	SOd 235	SOf 236	O`I 237	SOh 238	SOj 239
		a	ǒ	ô	ō	ōh	—	ə	ū		û	ə			
SOk 240	SOl 241	SO; 242	OiU 243	O`U 244	SOb 245	SOi 246	SOñ 247	SO, 248	SO. 249	Oh 250	Ok 251	SOz 252	SOg 253	SOx 254	SOt 255

Access Code Listing - SIL Hebrew Transliteration Encoding

Access Codes	ASCII	Trans	Trans Caps	Description					
032				space	104	h	h	H	he
033	!	!	!	exclam	105	i	i	I	class2_hireq
034	"	"	"	abbrv_2	107	k	ḵ	Ḳ	kaf
035	#	'	'	abbrv_1	108	l	l	L	lamed
039	'	׃	׃	aleph	109	m	m	M	mem
040	(	(	(	openparen	110	n	n	N	nun
041	)	)	)	closeparen	111	o	o	O	class2_kamets_o
042	*	*	*	asterisk	112	p	ṣ	Ṗ	pe
043	+	׀	׀	high_asterisk	113	q	q	Q	qoph
044	,	,	,	comma	114	r	r	R	resh
045	-	-	-	makkef	115	s	s	S	samek
046	.	.	.	period	116	t	ṭ	Ṭ	taw
047	/	/	/	slash	117	u	u	U	class2_qibb
048	0	0	0	zero	118	v	ׇ	ׇ	ayin
049	1	1	1	one	119	w	w	W	waw
050	2	2	2	two	120	x	ḥ	Ḥ	heth
051	3	3	3	three	121	y	y	Y	yod
052	4	4	4	four	122	z	z	Z	zayin
053	5	5	5	five	123	{	{	{	openbrace
054	6	6	6	six	125	}	}	}	closebrace
055	7	7	7	seven	126	~	׀	׀	circellus
056	8	8	8	eight	145		׀	׀	openquote
057	9	9	9	nine	146		׀	׀	closequote
058	:	:	:	sof_pasuq	147		“	“	opendbquote
059	;	;	;	semicolon	148		”	”	closedbquote
060	<	§	§	setuma	150		—	—	endash
062	>	¶	¶	petuha	151		—	—	emdash
063	?	?	?	question	171		«	«	guillemotopen
064	@			placeholder	176				nonbreakingspace
065	A	ā	Ā	class2_kamets	180		˘	˘	class2_accent
066	B	b	B	*beth_dagesh	181		˘	˘	*class1_accent
068	D	d	D	*daleth_dagesh	187		»	»	guillemotclose
069	E	ē	Ē	class2_tsere	202		ê	Ê	class2_tsere_yod
071	G	g	G	*gimel_dagesh	203		ēh	ĒH	class2_tsere_he
072	H	ḥ	Ḥ	shin	208		·	·	dagesh
075	K	k	K	*kaf_dagesh	225		ă	Ă	class2_h_patah
078	N	n	N	inverted_nun	226				zerowidthletter
079	O	ō	Ō	class1_holem	228		â	Â	class2_kamets_he
080	P	p	P	*pe_dagesh	233		ë	Ë	class2_h_segol
083	S	ṣ	Ṣ	unp_sin	234		ê	Ê	class2_segol_yod
084	T	t	T	*taw_dagesh	235		eh	EH	class2_segol_he
087	W	ś	Ś	sin	236		ī	Ī	*def_hireq
088	X	ṭ	Ṭ	teth	238		î	Î	class2_hireq_yod
091	[	[	[	openbracket	242		ª	ª	*furtive patah
092	\	\	\	backslash	243		ö	Ö	class2_h_kamets
093	]	]	]	closebracket	244		ô	Ô	holem_waw
097	a	a	A	class2_patah	245		ō	Ō	*def_holem
098	b	ḇ	B	beth	246		ōh	ŌH	class1_holem_he
099	c	ṣ	Ṣ	tsade	247		—	—	*he_mappiq
100	d	ḏ	Ḍ	daleth	248		—	—	class2_silent_shewa
101	e	e	E	class2_segol	249		ū	Ū	*def_shureq
103	g	ḡ	Ḡ	gimel	251		û	Û	shureq
					252		ə	Ə	class2_shewa

* Items with asterisks are part of the transliteration display encoding only. They have no relationship to the character at that location in the Hebrew font.

Chapter 13 —Appendix D — Comparison of SIL Hebrew Standard with Transliteration Encoding

Access Codes	ASCII	Hebrew	Trans	Description	Access Codes	ASCII	Hebrew	Trans	Description
032				space	099	c	צ	ṣ	tsade
033	!	!	!	exclam	100	d	ד	ḏ	daleth
034	"	”	"	abbrv_2	101	e	ע	e	class2_segol
035	#	‘	'	abbrv_1	103	g	ג	ḡ	gimel
036	\$	.		number	104	h	ה	h	he
037	%	..		number2	105	i	י	i	class2_hireq
038	&	-		rafe	107	k	כ	k	kaf
039	'	א	ʾ	aleph	108	l	ל	l	lamed
040	(	)	(	openparen	109	m	מ	m	mem
041	)	(	)	closeparen	110	n	נ	n	nun
042	*	*	*	asterisk	111	o	ו	o	class2_kamets_o
043	+	+	+	high_asterisk	112	p	פ	p̄	pe
044	,	,	,	comma	113	q	ק	q	qoph
045	-	-	-	makkef	114	r	ר	r	resh
046	.	.	.	period	115	s	ס	s	samek
047	/	/	/	slash	116	t	ת	t̄	taw
048	0	0	0	zero	117	u	וּ	u	class2_qibb
049	1	1	1	one	118	v	ע	ṽ	ayin
050	2	2	2	two	119	w	ו	w	waw
051	3	3	3	three	120	x	ח	ḥ	heth
052	4	4	4	four	121	y	י	y	yod
053	5	5	5	five	122	z	ז	z	zayin
054	6	6	6	six	123	{	}	{	openbrace
055	7	7	7	seven	124	|	|		paseq
056	8	8	8	eight	125	}	{	}	closebrace
057	9	9	9	nine	126	~	וֹ	ṭ̄	circellus
058	:	:	:	sof_pasuq	128		׃		class2_rebia
059	;	;	;	semicolon	129		ׂ		class2_zakef
060	<	ס	§	setuma	130		סֵ		segolta
062	>	פ	¶	petuha	131		קֵ		class2_telisha_qetanna
063	?	?	?	question	132		קֶ		class2_telisha_gedola
064	@	□		placeholder	133		קֶסֶ		class2_pazer_gad
065	A	אֲ	ā	class2_kamets	134		קֶסֶסֶ		class2_ole_weyored
069	E	אֵ	ē	class2_tsere	135		קֶסֶסֶסֶ		class2_pazer
072	H	אִ	ī	shin	136		קֶסֶסֶסֶסֶ		class2_zakef_gadol
078	N	אִי	ī	inverted_nun	137		קֶסֶסֶסֶסֶסֶ		class2_pashta
079	O	אִי	ī	class1_holem	138		קֶסֶסֶסֶסֶסֶסֶ		class2_geresh
083	S	אִי	ī	unp_sin	139		קֶסֶסֶסֶסֶסֶסֶסֶ		class2_gershayim
078	N	אִי	ī	inverted_nun	140		קֶסֶסֶסֶסֶסֶסֶסֶסֶ		class2_illuj
087	W	אִי	ī	sin	141		קֶסֶסֶסֶסֶסֶסֶסֶסֶסֶ		class2_zarqa
088	X	אִי	ī	teth	142		קֶסֶסֶסֶסֶסֶסֶסֶסֶסֶסֶ		class2_salseleth
091	[	[	[	openbracket	143		קֶסֶסֶסֶסֶסֶסֶסֶסֶסֶסֶ		class1_left_pashta
092	\	\	\	backslash	144		קֶסֶסֶסֶסֶסֶסֶסֶסֶסֶסֶ		left_zarqa
093	]	]	]	closebracket	145		קֶסֶסֶסֶסֶסֶסֶסֶסֶסֶסֶ	‘	openquote
097	a	אֲ	a	class2_patah	146		קֶסֶסֶסֶסֶסֶסֶסֶסֶסֶסֶ	’	closequote
098	b	בֲ	b	beth	147		קֶסֶסֶסֶסֶסֶסֶסֶסֶסֶסֶ	“	opendblquote

Access Codes	ASCII	Hebrew	Trans	Description	Access Codes	ASCII	Hebrew	Trans	Description
148		“	”	closedblquote	202		ײ	ê	class2_tsere_yod
149		׳		metheg	203		ײ	ēh	class2_tsere_he
150		—	—	endash	208		·	·	dagesh
151		—	—	emdash	225		׃	ă	class2_h_patah
152		◀		yetib	226				zerowidthletter
153		׃		tebir	228		ײ	â	class2_kamets_he
154		׃		galgal	233		ײ	ě	class2_h_segol
155		׃		tipha	234		ײ	ê	class2_segol_yod
156		׃		mereka	235		ײ	eh	class2_segol_he
157		׃		class2_mereka_k	236		ײ	ī	def_hireq
158		׃		class1_munah	238		ײ	î	class2_hireq_yod
159		׃		darga	243		ײ	ō	class2_h_kamets
161		׃		class1_athnah	244		ײ	ô	holem_waw
171		»	«	guillemotopen	245		ײ	ō	def_holem
176				nonbreakingspace	246		ײ	ōh	class1_holem_he
178		·		punctum	248		ײ	ə	class2_silent_shewa
179		·		punctum2	249		ײ	û	def_shureq
180		◀	׳	class2_accent	251		ײ	û	shureq
187		«	»	guillemotclose	252		ײ	ə	class2_shewa

Chapter 14 —Appendix E — Comparison of SIL Hebrew Display with Transliteration Encoding

Access Code	Hebrew	Trans	Trans Caps	Description	Access Code	Hebrew	Trans	Trans Caps	Description
032				space	078	נ	n	N	inverted_nun
033	!	!	!	exclam	079	װ	ō	Ō	class1_holem
034	~	"	"	abbrv_2	080	װ	p	P	class1_illuj
035	׳	'	'	abbrv_1	081	װ			class1_zarqa
036	.			number	082	װ			class1_salseleth
037	..			number2	083	שׁ	ś	Ś	unp_sin
038	-			rafe	084	ת	t	T	class1_mereka_k
039	א	ׁ	ׁ	aleph	085	ג			class1_gershayim
040	)	(	(	openparen	086	װ			class1_left_zarqa
041	(	)	)	closeparen	087	שׂ	ś	Ś	sin
042	*	*	*	asterisk	088	ט	t	T	teth
043	װ			high_asterisk	089	װ			class1_tipha
044	,	,	,	comma	090	װ			class2_munah
045	-	-	-	makkef	091	[	[	[	openbracket
046	.	.	.	period	092	\	\	\	backslash
047	/	/	/	slash	093	]	]	]	closebracket
048	0	0	0	zero	094				class1_darga
049	1	1	1	one	095	װ			class1_tebir
050	2	2	2	two	096	װ			class1_yetib
051	3	3	3	three	097	א	a	A	class2_patah
052	4	4	4	four	098	ב	b	B	beth
053	5	5	5	five	099	צ	ṣ	Ṣ	tsade
054	6	6	6	six	100	ד	d	D	daleth
055	7	7	7	seven	101	װ	e	E	class2_segol
056	8	8	8	eight	102	װ			class2_left_pashta
057	9	9	9	nine	103	ג	g	G	gimel
058	:	:	:	sof_pasuq	104	ה	h	H	he
059	;	;	;	semicolon	105	װ	i	I	class2_hireq
060	ס	ṣ	Ṣ	setuma	106	װ			class2_galgal
061	װ			class1_pashta	107	כ	k	K	kaf
062	פ	ׁ	ׁ	petuha	108	ל	l	L	lamed
063	?	?	?	question	109	מ	m	M	mem
064	□			placeholder	110	נ	n	N	nun
065	װ	ā	Ā	class2_kamets	111	װ	o	O	class2_kamets_o
066	װ	b	B	class1_mereka	112	פ	p	P	pe
067	װ			class2_dagesh	113	ק	q	Q	qoph
068	װ	d	D	class1_zakef_gadol	114	ר	r	R	resh
069	װ	ē	Ē	class2_tsere	115	ס	s	S	samek
070	װ			class3_dagesh	116	ת	t	T	taw
071	װ	g	G	class5_dagesh	117	װ	u	U	class2_qibb
072	שׁ	ś	Ś	shin	118	ע	c	Ḥ	ayin
073	װ			class6_dagesh	119	ו	w	W	waw
074	װ			class7_dagesh	120	ה	h	Ḥ	heth
075	װ	k	K	class8_dagesh	121	י	y	Y	yod
076	װ			class9_dagesh	122	ז	z	Z	zayin
077	װ			class1_geresh	123	}	{	{	openbrace

Access Code	Hebrew	Trans	Trans Caps	Description	Access Code	Hebrew	Trans	Trans Caps	Description
124	|			paseq	175	˙			class1_zakef
125	{	}	}	closebrace	176				nonbreakingspace
126	◌◌	†	†	circellus	177	ˆ			class1_segolta
127				RESERVED	178	˙			punctum
128	˙			class2_rebia	179	◌◌	˙	˙	punctum2
129	ˆ			class2_zakef	180	◌◌	˙	˙	class2_accent
130	◌◌			segolta	181	◌◌			class1_accent
131	◌◌			telisha_qetanna	182	◌◌			class1_telisha_qetanna
132	◌◌			class2_telisha_gedola	183	˙			class1_dagesh
133	◌◌			class2_pazer_gadla	184	◌◌			class1_telisha_gedola
134	◌◌			class2_ole_veyored	185	◌◌			class1_pazer_gadla
135	◌◌			class2_pazer	186	◌◌			class1_ole_veyored
136	◌◌			class2_zakef_gadol	187	◌◌	»	»	guillemotclose
137	◌◌			class2_pashta	188	◌◌			class1_pazer
138	◌◌			class2_geresh	189	◌◌			class1_metheg
139	◌◌			class2_gershayim	190	◌◌			class15_metheg
140	◌◌			class2_illuj	191	◌◌			class2_metheg
141	◌◌			class2_zarqa	192	◌◌			class3_metheg
142	◌◌			class2_salseleth	193	◌◌			class4_metheg
143	◌◌			class1_left_pashta	194	◌◌			class1_patah
144	◌◌			left_zarqa	195	◌◌			class1_kamets
145	◌◌	‘	‘	openquote	196	◌◌			class1_kamets_o
146	◌◌	’	’	closequote	197	◌◌			class1_tsere
147	◌◌	“	“	opendbquote	198	◌◌			class1_segol
148	◌◌	”	”	closedbquote	199	◌◌			class1_hireq
149	◌◌			metheg	200	◌◌			class2_holem
150	—	—	—	endash	201	◌◌			class1_qibb
151	—	—	—	emdash	202	◌◌	ê	Ê	class2_tsere_yod
152	◌◌			yetib	203	◌◌	ēh	ĒH	class2_tsere_he
153	◌◌			tebir	204	◌◌			class1_shewa
154	◌◌			galgal	205	◌◌			class1_silent_shewa
155	◌◌			tipha	206	◌◌			class1_h_segol
156	◌◌			mereka	207	◌◌			class1_h_patah
157	◌◌			class2_mereka_k	208	◌◌			dagesh
158	◌◌			class1_munah	209	◌◌			class3_patah
159	◌◌			darga	210	◌◌			class3_kamets
160	◌◌			RESERVED	211	◌◌			class3_kamets_o
161	◌◌			class1_athnah	212	◌◌			class3_tsere
162	◌◌			final_kaf	213	◌◌			class3_segol
163	◌◌			final_mem	214	◌◌			class3_hireq
164	◌◌			final_nun	215	◌◌			class3_holem
165	◌◌			final_pe	216	◌◌			class3_qibb
166	◌◌			final_tsade	217	◌◌			class3_shewa
167	◌◌			final_ka	218	◌◌			class3_silent_shewa
168	◌◌			final_na	219	◌◌			class3_h_segol
169	◌◌			final_pe_dagesh	220	◌◌			class3_h_patah
170	◌◌			final_kaf_shewa	221	◌◌			class3_h_kamets
171	»	«	«	guillemotopen	222	◌◌			class4_patah
172	◌◌			final_kaf_dagesh	223	◌◌			class4_kamets
173	◌◌			final_ka_dagesh	224	◌◌			class4_kamets_o
174	◌◌			class1_rebia	225	◌◌	ă	Ă	class2_h_patah

Access Code	Hebrew	Trans	Trans Caps	Description
226				zerowidthletter
227				class4_tsere
228	הַ	â	Â	class2_kamets_he
229	ֵ			class4_segol
230	ִ			class4_hireq
231	ֶ			class4_qibb
232	ֹ			class4_shewa
233	ֻ	ě	Ě	class2_h_segol
234	ֿ	ê	Ê	class2_segol_yod
235	הֶ	eh	EH	class2_segol_he
236	הֵ	ī	Ī	class1_h_kamets/de f_hireq
237				class4_silent_shewa
238	ִּ	î	Î	class2_hireq_yod
239	ֵּ			class4_h_segol
240	ֶּ			class4_h_patah
241	ֹּ			class4_h_kamets
242	אֶ	a	A	class2_athnah/furtiv e patah
243	אֻ	ö	Ö	class2_h_kamets
244	אִ	ô	Ô	holem_waw
245	אֵ	ō	Ō	class4_mereka/def_ holem
246	הֶּ	ōh	ŌH	class1_holem_he
247	ִּי	—	—	class4_tipha
248	ֵּי	ə	Ə	class2_silent_shewa
249	אִי	ū	Ū	class4_munah/def_s hureq
250				class4_darga
251	אִיִּי	û	Û	shureq
252	ֵּי	ə	Ə	class2_shewa
253	אֶּ			class4_athnah
254	אֶּי			class2_h_patah_me theg
255				thinspace

Chapter 15 —Appendix F — Overstriking Characters

ANSI	Hebrew	Punctuation, etc.
35	ⲁ	abbrv_1
34	Ⲃ	abbrv_2
42	ⲃ	asterisk
43	Ⲅ	high_asterisk
36	ⲅ	number
37	Ⲇ	number2
181	ⲇ	class1_accent
180	Ⲉ	class2_accent
126	ⲉ	circellus
178	Ⲋ	punctum
179	ⲋ	punctum2
183	Ⲍ	class1_dagesh
67	ⲍ	class2_dagesh
70	Ⲏ	class3_dagesh
208	ⲏ	dagesh
71	Ⲑ	class5_dagesh
73	ⲑ	class6_dagesh
74	Ⲓ	class7_dagesh
75	ⲓ	class8_dagesh
76	Ⲕ	class9_dagesh
38	ⲕ	rafe

ANSI	Hebrew	Cantillation Marks
124	ⲕ	paseq
128	Ⲍ	class2_rebia
174	ⲍ	class1_rebia
129	Ⲏ	class2_zakef
175	ⲏ	class1_zakef
130	Ⲑ	segolta
177	ⲑ	class2_segolta
131	Ⲓ	telisha_qetanna
182	ⲓ	class1_telisha_qetanna
132	Ⲕ	class2_telisha_gedola

ANSI	Hebrew	Cantillation Marks
184	ⲕ	class1_telisha_gedola
133	Ⲍ	class2_pazer_gad
185	ⲍ	class1_pazer_gad
134	Ⲏ	class2_ole_weyored
186	ⲏ	class1_ole_weyored
135	Ⲑ	class2_pazer
188	ⲑ	class1_pazer
136	Ⲓ	class2_zakef_gadol
68	ⲓ	class1_zakef_gadol
137	Ⲕ	class2_pashta
61	ⲕ	class1_pashta
138	Ⲍ	class2_geresh
77	ⲍ	class1_geresh
139	Ⲏ	class2_gershayim
85	ⲏ	class1_gershayim
140	Ⲑ	class2_illuj
80	ⲑ	class1_illuj
141	Ⲓ	class2_zarqa
81	ⲓ	class1_zarqa
142	Ⲕ	class2_salseleth
82	ⲕ	class1_salseleth
143	Ⲍ	class1_left_pashta
144	ⲍ	left_zarqa
86	Ⲏ	class2_left_zarqa
149	ⲏ	metheg
189	Ⲑ	class1_metheg
190	ⲑ	class15_metheg
191	Ⲓ	class2_metheg
192	ⲓ	class3_metheg
193	Ⲕ	class4_metheg

ANSI	Hebrew	Cantillation Marks
152	◻ ◀	yetib
96	◻ ◀	class1_yetib
153	◻ ↙	tebir
95	◻ ↙	class1_tebir
154	◻ ↘	galgal
106	◻ ↘	class1_galgal
155	◻ ↘	tipha
89	◻ ↘	class1_tipha
247	◻ ↘	class4_tipha
156	◻ /	mereka
66	◻ /	class1_mereka
245	◻ /	class4_mereka
157	◻ //	class2_mereka_k
84	◻ //	class1_mereka_k
158	◻ J	class1_munah
90	◻ J	class2_munah
249	◻ J	class4_munah
159	◻ s	darga
94	◻ s	class1_darga
250	◻ s	class4_darga
161	◻ ^	class1_athnah
242	◻ ^	class2_athnah
253	◻ ^	class4_athnah

ANSI	Hebrew	Trans	Vowels
194	◻		class1_patah
97	◻	a	class2_patah
209	◻		class3_patah
222	◻		class4_patah
195	◻ ◌̣		class1_kamets
65	◻ ◌̣	ā	class2_kamets
210	◻ ◌̣		class3_kamets
223	◻ ◌̣		class4_kamets
196	◻ ◌̣		class1_kamets_o
111	◻ ◌̣	o	class2_kamets_o
211	◻ ◌̣		class3_kamets_o
224	◻ ◌̣		class4_kamets_o
199	◻ ◌̣		class1_hireq
105	◻ ◌̣	i	class2_hireq
214	◻ ◌̣		class3_hireq
230	◻ ◌̣		class4_hireq
198	◻ ◌̣		class1_segol
101	◻ ◌̣	e	class2_segol
213	◻ ◌̣		class3_segol
229	◻ ◌̣		class4_segol
197	◻ ◌̣		class1_tsere
69	◻ ◌̣	ē	class2_tsere
212	◻ ◌̣		class3_tsere
227	◻ ◌̣		class4_tsere
79	◻ ◌̣	ō	class1_holem
200	◻ ◌̣		class2_holem
215	◻ ◌̣		class3_holem
201	◻ ◌̣		class1_qibb
117	◻ ◌̣	u	class2_qibb
216	◻ ◌̣		class3_qibb
231	◻ ◌̣		class4_qibb
204	◻ ◌̣		class1_shewa

ANSI	Hebrew	Trans	Vowels
252		ə	class2_shewa
217			class3_shewa
232			class4_shewa
207			class1_h_patah
225		ă	class2_h_patah
220			class3_h_patah
240			class4_h_patah
236		ī	class1_h_kamets
243		ō	class2_h_kamets
221			class3_h_kamets
241			class4_h_kamets
206			class1_h_segol
233		ě	class2_h_segol
219			class3_h_segol
239			class4_h_segol
205			class1_silent_shewa
248		ə	class2_silent_shewa
218			class3_silent_shewa
237			class4_silent_shewa
254			class2_h_patah_metheg
102			class2_h_segol_metheg
238		î	class2_hireq_yod
202		ê	class2_tsere_yod
234		ê	class2_segol_yod
228		â	class2_kamets_he
203		ēh	class2_tsere_he
235		eh	class2_segol_he
246		ōh	class1_holem_he

Shaded areas are display encodings.

Chapter 16 —Appendix G — ISO/Unicode/SI Standards Comparison

Following are charts showing the SIL Ezra encoding compared with some currently proposed standards. This is provided for those who wish to look into writing conversion programs for use with SIL Ezra. One restriction for this project, which was begun in 1994, was that the encoding must be somewhat legible in a standard Roman font. That is why the user will not see any correlation between this encoding and current standards.

Most of the information in the following charts was taken in April 1997 from the Internet site: http://ourworld.compuserve.com/homepages/Jonathan_Rosenne/, with the author's permission.

The Hebrew Letters

Hebrew codes contain 27 letters, the 22 basic letters of the Hebrew alphabet and the 5 final forms.

Name	ISO 8859-8	PC	ISO 10646	7-bit ASCII	SIL Ezra
Proponent/Author	SI 1311	SI 1507	Unicode		SIL
Hebrew Letter Alef	e0/224	80/128	05d0/1488	96	39
Hebrew Letter Bet	e1/225	81/129	05d1/1489	97	98
Hebrew Letter Gimel	e2/226	82/130	05d2/1490	98	103
Hebrew Letter Dalet	e3/227	83/131	05d3/1491	99	100
Hebrew Letter He	e4/228	84/132	05d4/1492	100	104
Hebrew Letter Vav	e5/229	85/133	05d5/1493	101	119
Hebrew Letter Zayin	e6/230	86/134	05d6/1494	102	122
Hebrew Letter Het	e7/231	87/135	05d7/1495	103	120
Hebrew Letter Tet	e8/232	88/136	05d8/1496	104	88
Hebrew Letter Yod	e9/233	89/137	05d9/1497	105	121
Hebrew Letter Final Kaf (sofit)	ea/234	8a/138	05da/1498	106	na
Hebrew Letter Kaf	eb/235	8b/139	05db/1499	107	107
Hebrew Letter Lamed	ec/236	8c/140	05dc/1500	108	108
Hebrew Letter Final Mem (sofit)	ed/237	8d/141	05dd/1501	109	na
Hebrew Letter Mem	ee/238	8e/142	05de/1502	110	109
Hebrew Letter Final Nun (sofit)	ef/239	8f/143	05df/1503	111	na
Hebrew Letter Nun	f0/240	90/144	05e0/1504	112	110
Hebrew Letter Samekh	f1/241	91/145	05e1/1505	113	115
Hebrew Letter Ayin	f2/242	92/146	05e2/1506	114	118
Hebrew Letter Final Pe (sofit)	f3/243	93/147	05e3/1507	115	na
Hebrew Letter Pe	f4/244	94/148	05e4/1508	116	112
Hebrew Letter Final	f5/245	95/149	05e5/1509	117	na

Name Proponent/Author	ISO 8859-8 SI 1311	PC SI 1507	ISO 10646 Unicode	7-bit ASCII	SIL Ezra SIL
Tsadi (sofit)					
Hebrew Letter Tsadi	f6/246	96/150	05e6/1510	118	99
Hebrew Letter Qof	f7/247	97/151	05e7/1511	119	113
Hebrew Letter Resh	f8/248	98/152	05e8/1512	120	114
Hebrew Letter Shin	f9/249	99/153	05e9/1513	121	83
Hebrew Letter Tav	fa/250	9a/154	05ea/1514	122	116

The Hebrew Points

Hebrew points (in Hebrew, Niqud) indicate vowels and other details affecting pronunciation. Their use is optional. The table also includes traditional Hebrew punctuation.

The points are only included in the newer character codes: ISO 10646, Unicode, and SI 1311-1.

Name Proponent/Author	ISO 10646 Unicode	SI 1311-1	SIL Ezra SIL
Hebrew Point Sheva	05b0/1456	c0/192	252
Hebrew Point Hataf Segol	05b1/1457	c1/193	233
Hebrew Point Hataf Patah	05b2/1458	c2/194	225
Hebrew Point Hataf Qamats	05b3/1459	c3/195	243
Hebrew Point Hiriq	05b4/1460	c4/196	105
Hebrew Point Tsere	05b5/1461	c5/197	69
Hebrew Point Segol	05b6/1462	c6/198	101
Hebrew Point Patah	05b7/1463	c7/199	97
Hebrew Point Qamats	05b8/1464	c8/200	65
Hebrew Point Holam	05b9/1465	c9/201	79
Hebrew Point Qubuts	05bb/1467	cb/203	117
Hebrew Point Dagesh or Mapiq or Shuruq	05bc/1468	cc/204	208
Hebrew Point Meteg	05bd/1469	cd/205	149
Hebrew Punctuation Maqaf	05be/1470	ce/206	45
Hebrew Point Rafe	05bf/1471	cf/207	38
Hebrew Punctuation Paseq	05c0/1472	d0/208	124
Hebrew Point Shin Dot	05c1/1473	d1/209	na
Hebrew Point Sin Dot	05c2/1474	d2/210	na
Hebrew Punctuation Sof Pasuq	05c3/1475	d3/211	58
Hebrew Mark Upper Dot	05c4/1476	d4/212	178

The Hebrew Cantillation Marks

The cantillation marks, also known as accents (in Hebrew, Teamim or Teamey Hamiqra) are used with biblical texts to indicate precise punctuation and the notes

for reading the text in public. The cantillation marks are included in Unicode 2.0, SI 1311-2 and proposed additions to ISO 10646.

Name	ISO 10646	SI 1311-2	SIL Ezra
Proponent/Author	Unicode		SIL
Accent Etnahta	0591/1425	a1/161	161
Hebrew Accent Segol	0592/1426	a2/162	130
Hebrew Accent Shalshelet	0593/1427	a3/163	142
Hebrew Accent Zaqef Qatan	0594/1428	a4/164	129
Hebrew Accent Zaqef Gadol	0595/1429	a5/165	136
Hebrew Accent Tipeha	0596/1430	a6/166	155
Hebrew Accent Revia	0597/1431	a7/167	128
Hebrew Accent Zarqa	0598/1432	a8/168	141
Hebrew Accent Pashta	0599/1433	a9/169	143
Hebrew Accent Yetiv	059a/1434	aa/170	152
Hebrew Accent Tevir	059b/1435	ab/171	153
Hebrew Accent Geresh	059c/1436	ac/172	138
Hebrew Accent Geresh Muqdam	059d/1437	ad/173	?
Hebrew Accent Gershayim	059e/1438	ae/174	139
Hebrew Accent Qarney Para	059f/1439	af/175	133
Hebrew Accent Telisha Gedola	05a0/1440	b0/176	132
Hebrew Accent Pazer	05a1/1441	b1/177	135
Hebrew Accent Munah	05a3/1443	b3/179	158
Hebrew Accent Mahapakh	05a4/1444	b4/180	152
Hebrew Accent Merkha	05a5/1445	b5/181	156
Hebrew Accent Merkha Kefula	05a6/1446	b6/182	157
Hebrew Accent Darga	05a7/1447	b7/183	159
Hebrew Accent Qadma	05a8/1448	b8/184	137
Hebrew Accent Telisha Qetana	05a9/1449	b9/185	131
Hebrew Accent Yerah Ben Yomo	05aa/1450	ba/186	154
Hebrew Accent Ole	05ab/1451	bb/187	134
Hebrew Accent Iluy	05ac/1452	bc/188	140
Hebrew Accent Dehi	05ad/1453	bd/189	155
Hebrew Accent Zinor	05ae/1454	be/190	144
Hebrew Mark Masora Circle	05af/1455	bf/191	126

na = Not Available

Index

A

Alternate Cantillation, 6-19
 Appendix A, 4-10, 10-27
 Appendix B, 4-11, 11-31
 Appendix C, 5-12, 12-36
 Appendix D, 13-39
 Appendix E, 14-41
 Appendix F, 16-47
 Auto-Correct, 9-25

B

Biblia Hebraica Stuttgartensia, 1-4, 7-20

C

Cantillation, 6-18, 7-21, 16-48
 CCAT, 8-24
 Consistent Changes, 1-1, 4-11, 8-23
 Contacting Us, 1-3
 Conversion, 8-23
 Converting, 4-11

D

Dagesh, 5-14, 5-15
 Display Encoding, 3-8, 4-9, 4-11, 11-31
 Distribution, 1-1

E

Email, 1-3
 Encoding, 4-9, 4-10, 4-11, 5-17

F

FAX, 1-3
 Final Forms, 5-12, 7-21, 9-26, 16-47
 Final He, 5-15

G

GX, 8-23

H

hotkeys, 9-25

I

Installation, 2-7
 Installation & User's Guide, 3-8
 Installation & Users Guide, 1-1
 Introduction, 1-1
 ISO, 16-47

K

Keyboard, 3-8

KeyMan, 1-1, 4-10, 4-11

L

License, 1-2
 Long Vowels, 5-13

M

mater lectionis, 3-8, 5-14, 7-20
 Michigan-Claremont, 8-24

P

Points, 16-48
 problems, 9-25
 Punctuation, 5-16, 9-26, 16-48
 punctum, 5-16, 7-21

Q

QuickDraw GX, 1-1, 4-10, 5-17, 6-18, 10-27, 11-31

R

Reduced Vowels, 5-13

S

Shewa, 5-14
 Short Vowels, 5-13
 SI, 16-47
 SILKey, 1-1, 4-10, 4-11
 Standard Encoding, 3-8, 4-9, 4-10, 5-14, 5-17, 6-18, 10-27, 11-31
 Standards, 16-47
 Summer Institute of Linguistics, 1-1
 Support, 1-3

T

Telephone, 1-3
 Transliteration, 5-12, 5-17
 Transliteration Encoding, 12-36

U

Unicode, 16-47

V

video driver, 9-25
 Vowel, 7-20
 Vowels, 5-12, 9-25, 16-48

W

Word 6, 9-25
 World Wide Web, 1-3
 WorldScript, 1-1